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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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05/23/2006

Kenji Kawasaki

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EXAMINER

FINEMAN, LEE A

ART UNIT

PAPER NUMBER

2872

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/579,975	KAWASAKI, KENJI	
	<b>Examiner</b>	<b>Art Unit</b>	
	LEE FINEMAN	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 2,6-9,13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5 and 10-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5/23/06 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/23/08</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Species I in the reply filed on 12 May 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 6, 13 and 14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Further, regarding claims 2 and 7-9, applicant states that this claim is directed to the elected species I. However, the optical transmission means included in these claims is clearly drawn to the fig. 5 of species II, which is/are non-elected. Therefore, claims 2 and 7-9 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Drawings***

2. The drawings are objected to because in fig. 3, "D" is incorrectly shown as from the sample to an objective lens shoulder on a body instead of a co-focal length of the objective lens as claimed. It is further recommended that D1, D2, D3, Fe, FTL and FTL1 are also shown in the drawings to prevent any confusion about its value.

3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing

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sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

4. The abstract of the disclosure is objected to because of legal phraseology (e.g., comprises, means). Correction is required. See MPEP § 608.01(b).
5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. For example, on page 10, line 27, “third embodiment” should be --second embodiment--.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1, 3-5 and 10-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the phrase "wherein a backside focal position of the objective lens **may** become conjugate..." renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. For the purposes of examination, the backside focal position of the objective lens **is** conjugate at a position near the scanning means. The dependent claims inherit the deficiencies of the claims from which they depend.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolleschensky, US 2004/0159797 A1.

Regarding claims 1 and 12, Wolleschensky discloses in fig. 8 a laser scan type fluorescence microscope comprising a laser light source section (LQ), an objective lens optical

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system (TL and O) by which excitation light from the laser light source section is condensed on a sample (PR), a scanning means (SX, SY) by which the excitation light from the laser light source section is scanned on a surface of the sample, a pupil projection lens (SO) arranged between the scanning means (SX, SY) and the objective lens optical system (TL and O), a detection optical system (DE1, DE2), which is constituted on the main body portion of a microscope (fig. 8) for detecting fluorescence which is emanated from the sample and has penetrated the objective lens optical system and the pupil projection lens (page 6, sections [0065]-[0066]), and the objective lens optical system further comprising an objective lens (O) and an image forming lens (TL) for forming an intermediate image (ZB) of the sample, wherein a backside focal position (P3) of the objective lens may become conjugate at a position near the scanning means by the image forming lens and the pupil projection lens (page 5, section [0063]). Wolleschensky appears to satisfy the following condition:  $0.1 \leq D/L \leq 0.5$  where D is a co-focal length of the objective lens, and L is a distance from the sample surface to the conjugate position of the backside focal position of the objective lens arranged near the scanning means in that the conjugate positions appear as equal distances as shown in fig. 1 (then D/L is  $\frac{1}{4}$  and meets the claimed range), but it is not explicitly stated that they are equal. However, Wolleschensky further teaches using equal focal lengths for optics in the 4f system of fig. 5. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the focal lengths of the objective optics equal thereby providing a D/L ratio of  $\frac{1}{4}$  within the claimed range as it is a very common, effective focusing configuration.

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10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wolleschensky in view Engelhardt et al., US 6,690,511 B2 (henceforth Engelhardt).

Wolleschensky discloses the claimed invention except for wherein the laser light source consists of a semiconductor laser. Engelhardt teaches using a semiconductor laser in laser scan type fluorescence microscopes (column 1, lines 56-59). It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the laser of Wolleschensky with a semiconductor laser as taught by Engelhardt to make a more compact system because of its small and lightweight construction (Engelhardt, column 1, lines 59-61).

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wolleschensky in view Ogino, US 6,282,020 B1.

Wolleschensky discloses the claimed invention except for wherein the objective lens is a submerged type objective lens. Ogino teaches using a liquid immersion type objective (therefore at least part of the objective would be submerged) in a laser scanning microscope (column 1, lines 30-32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the objective of Wolleschensky with a liquid immersion objective as taught by Ogino to enhance the resolution of the sample (Ogino, column 1, lines 30-32).

***Allowable Subject Matter***

12. Claims 3-5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

13. The following is a statement of reasons for the indication of allowable subject matter:

Claims 3-5 are allowable over the prior art for at least the reason that the prior art fails to teach and/or suggest a laser scan type fluorescence microscope including a laser light source, objective lens, imaging lens, scanning means, pupil projection lens and detection optical system that also satisfies the conditional expressions as set forth in the claimed combination.

### ***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yonetani et al., US 2005/0122576 A1 and Kumagai et al., US 5,612,818 disclose laser scan fluorescence microscopes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEE FINEMAN whose telephone number is (571)272-2313. The examiner can normally be reached on Monday - Friday 8:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on (571) 272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lee Fineman/  
Examiner, Art Unit 2872  
18 August 2008